# Biology Unit One Exam

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| Instructor: | Mr. Wasko |  | Name: |  |
| Results: |  |  | Class: | Biology |
|  |  |  | Period: | 3 |
|  |  |  | Date: | 12/13/14 |

Test is forty-four questions and is worth fifty points. Carefully read each question and circle the correct answer. One point per **Multiple Choice** question. Answer all twenty questions.

1. In what way are all cells alike?
   1. They require oxygen to live.
   2. They store their genetic instructions in DNA.
   3. They are about a tenth of a millimeter in diameter.
   4. They have a nucleus.
2. Genetic change by selection are the fundamentals of what process?
   1. Evolution
   2. Genetic drift
   3. DNA duplication
   4. Mutation
3. Which statement is NOT true about the differences between the liver and heart cells from te same animal?
   1. The different cells express different genes.
   2. The different cells have different roles in the body.
   3. The different cells have different DNA.
   4. The different cells have different forms of being self-sufficient.

1. What do eukaryotic cells have that prokaryotes lack?
   1. A cell wall.
   2. A nucleus and other internal organelles.
   3. A means of generating their own energy.
   4. A capsule.
2. Which of the following are prokaryotes?
   1. Plants and animals
   2. Bacteria and fungi
   3. Archaea and bacteria
   4. Animals and archaea
3. What statement is NOT true about prokaryotes?
   1. Prokaryotes store their genetic information in a nucleus.
   2. Prokaryotes use DNA to store their genetic information.
   3. Prokaryotes are mostly single-called organisms, but some are multicellular.
   4. Prokaryotes vary widely in shape and sizes.
4. Which of the following has a nucleus?
   1. Archaea
   2. Bacteria
   3. Yeast
   4. Chloroplast
5. Which statement is NOT true of chloroplast
   1. Chloroplasts produce food molecules and generate oxygen.
   2. Chloroplasts are present in essentially all eukaryotic cells.
   3. Chloroplasts are thought to have originated form bacteria.
   4. Chloroplasts contain their own DNA.
6. Which of the following organelles is a small, irregularly shaped organelle in which intracellular digestion occurs.
   1. Mitochondrion
   2. The endoplasmic reticulum
   3. Lysosome
   4. The Golgi apparatus
7. What mediates the exchange of materials between the endoplasmic reticulum, Golgi apparatus, the lysosomes and the outside of the cell?
   1. The cytosol
   2. Ribosomes
   3. Peroxisomes
   4. Vesicles
8. What is the name of the process by which eukaryotic cells engulf very large particles, or even entire foreign cells?
   1. Endocytosis
   2. Pinocytosis
   3. Exocytosis
   4. Lymphocytosis
9. The largest single compartment in most cells is:
   1. The nucleus.
   2. The Golgi apparatus.
   3. The lysosome.
   4. The cytosol.
10. Which of these is not part of the cytoskeleton?
    1. Cytosol
    2. Actin filaments
    3. Microtubules
    4. Intermediate filaments
11. What role is not performed by the cytoskeleton?
    1. Pulling duplicated chromosomes to opposite poles in dividing cells.
    2. Transporting organelles and molecules from one place to another in the cytoplasm.
    3. Generating chemical energy.
    4. Controlling cell shape and cell movement.
12. What is NOT a reason scientists study yeast?
    1. It carries out all the basic tasks a eukaryotic cell must perform.
    2. It lacks a nucleus so it is easy to genetically manipulate
    3. It is as closely related to animals as it is plants
    4. It reproduces rapidly in the lab
13. Which of the following is a model plant used by scientists:
    1. *Saccharomyces cerevisiae*
    2. *Arabidopsis*
    3. *Elegan*s
    4. *Drosophila*
14. Which term describes genes (and gene products) related by common ancestral gene?
    1. Analogous
    2. Homologous
    3. Vestigial
    4. Heterologous
15. A group of organisms at any particular level in a classification system is called a
    1. Species
    2. Genus
    3. Taxon
    4. Phylum
16. The oldest level of taxonomic classification is
    1. Class
    2. Family
    3. Genus
    4. Species
17. In the current taxonomic system, families are grouped into
    1. Classes
    2. Orders
    3. Divisions
    4. Kingdoms

*One point per* ***True/False*** *question. Answer all eight questions and circle the correct response.*

1. Modern Biologist prefer to perceive the phylogenetic tree of organisms as multibranched, rather than linear, with no particular species being “higher”, or superior, to another.
2. True
3. False
4. The binomial system of classification was developed by Linnaeus:
5. True
6. False
7. Throughout the world, official species names are in Greek:
8. True
9. False
10. The oldest level of taxonomic classification is a genus:
11. True
12. False
13. Polynomial classification has recently begun to replace the binomial system
14. True
15. False
16. The scientific name is derived from the genus and species to which an organism belongs.
17. True
18. False
19. Biologists currently recognize three kingdoms: Plants, Animals and Protists.
20. True
21. False
22. A cladogram conveys information about ancestors and descendants of an organism.
23. True
24. False

*One point per* ***Matching*** *Question. Answer all ten questions with the proper letter next to the correct statement.*

A. Domain Bacteria

B. Domain Archaea

C. Domain Eukarya

D. Population

E. Community

F. Ecosystem

H. Bio system

I. Metabolism

J. Development

K. Responsiveness

29. Includes the species that causes strep throat

30. Complex cells with a nucleus

31. Often live in extreme environments

32. All living organisms in an area

33. Group of organisms of the same species

34. Living biological entity

35. All living organisms and the nonliving physical environment

36. The process by which an organism grows and changes over time

37. The characteristic by which cells utilize energy

38. A characteristic by which organisms make accommodations based on the external and internal energy environment.

*Each of the three* ***short answer*** *questions is worth one point.*

39. In printing scientific names, it is conventional for only the \_\_\_\_\_\_\_\_\_\_\_\_ to be underlined or italicized.

1. Binomial
2. Genus
3. Species
4. Division

40. In printed scientific names, only the \_\_\_\_\_\_\_\_\_\_\_\_ is capitalized.

1. Family
2. Class
3. Species
4. Genus

41. A taxon consisting of the most closely related species is called a (n) \_\_\_\_\_\_\_\_\_\_\_\_\_.

1. Family
2. Order
3. Genus
4. Phylum

***Essay questions*** *are worth three points apiece. Grading on quality not quantity of work. Choose* ***any three essay*** *questions to be graded on.*

42. Define: Enzyme, substrate, product

43. Give an example of an organism that is normal flora in most humans, and one that is a pathogen. What do normal flora and pathogen mean?

44. Give at least four differences between eukaryotic and prokaryotic cells. It what respects are prokaryotic cells simpler than eukaryotic cells? In what respects are they more complex?

45. Explain three different functions of a pili.

Answer Sheet

1. B
2. A
3. C
4. B
5. C
6. A
7. C
8. B
9. C
10. D
11. A
12. D
13. A
14. C
15. B
16. B
17. B
18. C
19. C
20. B
21. True
22. True
23. False
24. True
25. False
26. True
27. False
28. True
29. A
30. C
31. B
32. E
33. D
34. H
35. F
36. J
37. I
38. K
39. A
40. D
41. C
42. – 45. Will be graded based upon student understanding.